



THE CRYPTO SOCIAL NETWORK

minds.com | minds.org

WHITEPAPER

V0.1 | Subject to change

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ABSTRACT

We are an open source and decentralized social networking platform where users are rewarded with Minds tokens for contributions to the community. Our goal is to build a new model for content creators to take back their Internet freedom, revenue and social reach.

There is a crisis occurring in the social networking world. *Surveillance, algorithm manipulation and censorship* are infecting the web at unprecedented levels. For the first time in history, millions of users are abandoning traditional, centralized social apps in favor of freedom-based alternatives.

Alongside this mass migration, blockchain technology and other decentralized solutions are rapidly entering the mainstream. The fusion of crypto into social applications is both inevitable and essential to the continued healthy evolution of social media and the Internet itself.

The purpose of this paper is to provide an overview of Minds, a leader in this mass Internet migration and free software movement, and to introduce the Minds token, an ERC-20 utility token that will be issued on the Ethereum blockchain.

In the Minds contribution economy, users and developers will be rewarded for a variety of contributions to the network including generating high quality content, account setup and verification, referring new users, maintaining an active channel, finding bugs, successfully submitting code and more. Tokenized rewards provide the key incentive to help foster the growth and long-term sustainability of the network.

Minds tokens will be immediately usable upon receipt on day one. They will be required for use of the application through immediate integration into Boost, a transparent and blockchain-based ad network, and Wire, the Minds peer-to-peer payment system. Both Boost and Wire will leverage smart contracts to enable the autonomous exchange of digital media and services for crypto-tokens, creating a radical shift in how social networking ecosystems and marketplaces operate in the 21st century.

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Disclaimer

This Minds White Paper is for informational purposes only. It is not a solicitation for investment and does not pertain in any way to an offering of securities in any jurisdiction. Ownership of the Minds token does not entitle the owner to any rights with respect to Minds, including distributions or voting rights.

The Minds token is not intended to constitute a security or currency in any jurisdiction. Ownership of the Minds token solely provides the Minds token owner with the right to obtain services, interact with content and interact with users on the Minds platform.

Purchase of the Minds token is final and non-refundable.

Individuals, businesses, and other organizations should carefully weigh the risks, costs and benefits of acquiring the Minds token before participating in the Minds Token Distribution Event. If you are not in the position to accept or understand the risks associated with the sale of the Minds token (including the risks related to any non-development or expansion of the Minds platform or any other risks as indicated in this Minds White Paper), you should not acquire the Minds token.

You are not eligible and you shall not purchase the Minds token through the Token Distribution Event if you are a citizen or resident (tax or otherwise) of any country, state, or territory where the purchase of the Minds token or similar crypto-tokens may be prohibited. By purchasing the Minds token, you represent and warrant that you are legally permitted to purchase the Minds token and assume the responsibility for complying with all applicable laws and regulations.

To the maximum extent permitted by the applicable laws, regulation and rules, the Minds token, Minds, and its officers and employees thereof shall not be liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract, or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with any acceptance of or reliance on this Minds White Paper or any part thereof by you.

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Minds assumes no liability or responsibility for any loss or damage that would result from or relate to the incapacity to use the Minds token.

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Neither Minds nor any of its officers and employees are to be or shall be considered as advisor in any legal, regulatory, tax, or financial matters. Acquiring the Minds token shall not grant any right or influence over Minds' organization and governance to the purchasers.

Risk disclosures are further set forth on pages 28-30 below.

1. INTRODUCTION

a. Overview

During the Minds Beta launch in 2015, hundreds of thousands of users rushed to the network for greater organic reach, privacy and monetization opportunities.

Today, Minds is the leading open source social network in the world with approximately 1 million registered users. In July of 2017 we closed a record-breaking SEC Regulation Crowdfunding campaign, raising \$1.03 million from 1,541 investors worldwide in just 19 days, proving the demand for a more open and cooperative business model in social media.¹

As Minds evolves, the goal of putting users first remains at the forefront of every business decision. A crypto-contribution economy running on the blockchain is a direct response to feedback and demands from the community and will have a positive impact on the network by incentivizing contributions, increasing revenue opportunity and providing an additional layer of transparency and autonomous operations.

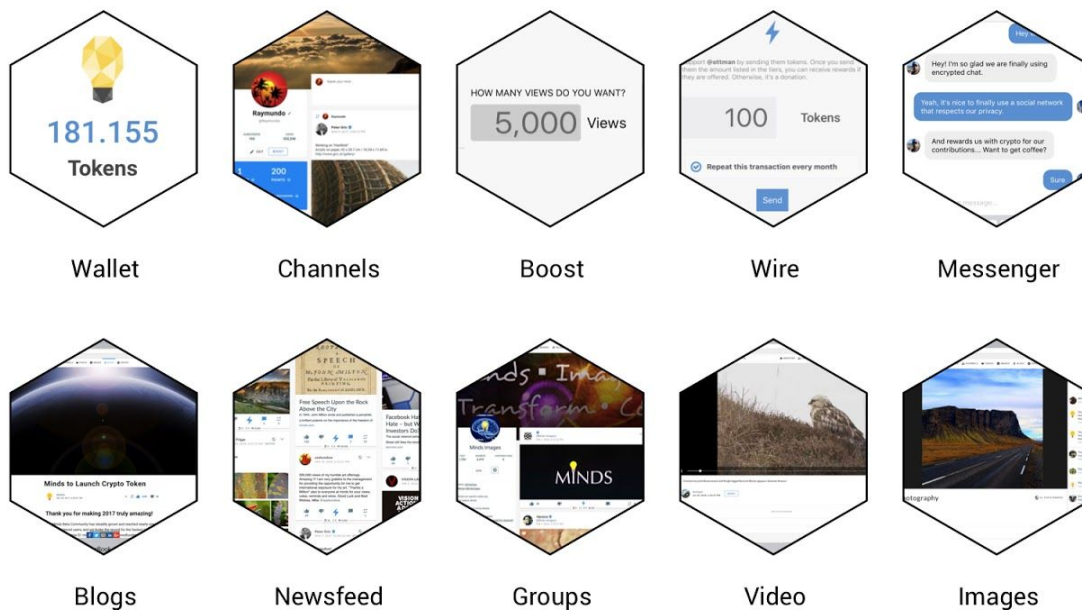


Figure 1.1

Features of Minds network

¹ <https://wefunder.com/minds>

b. Minds Beta

The Minds network has steadily grown since launching Beta in 2015. The application has quickly gained 73 million unique visitors, 223 million+ pageviews, 1 million registered users and 105,000+ logged-in monthly active users. The growth of the network has helped Minds strengthen its position as a viable alternative to the mainstream social networks that have recently come under public scrutiny.²

REGISTERED USERS

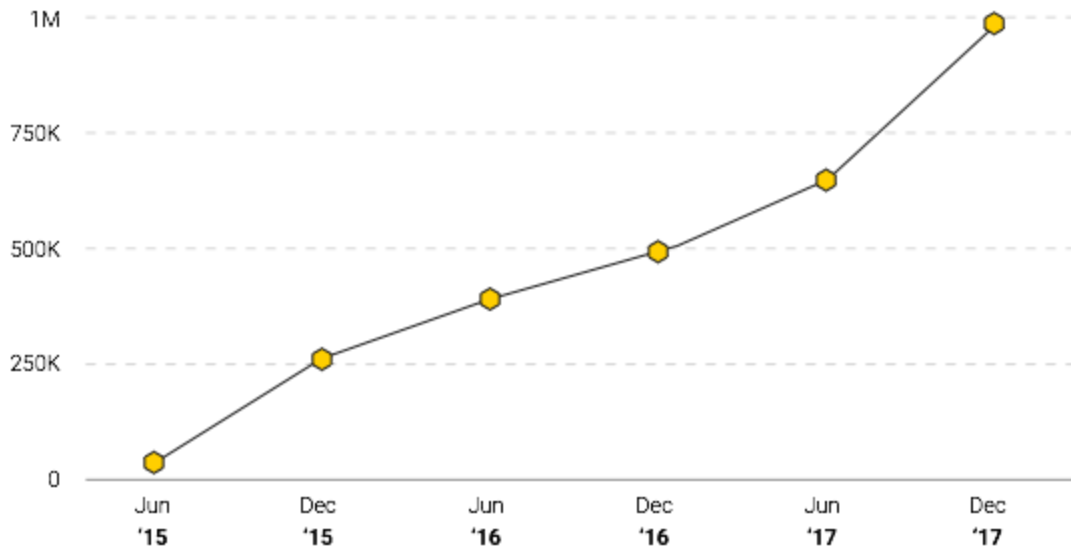


Figure 1.2

Graph of total registered users over time

MONTHLY ACTIVE USERS

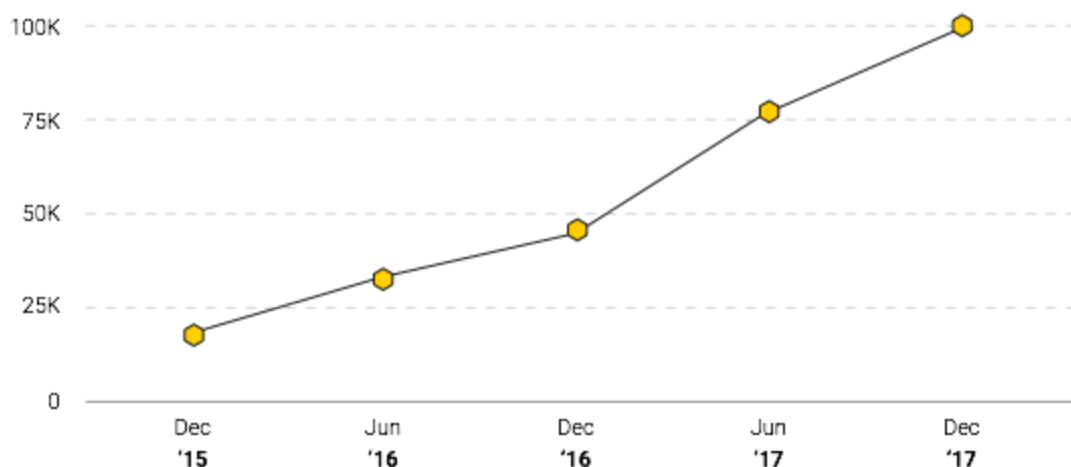


Figure 1.3

Graph of total logged in MAU over time

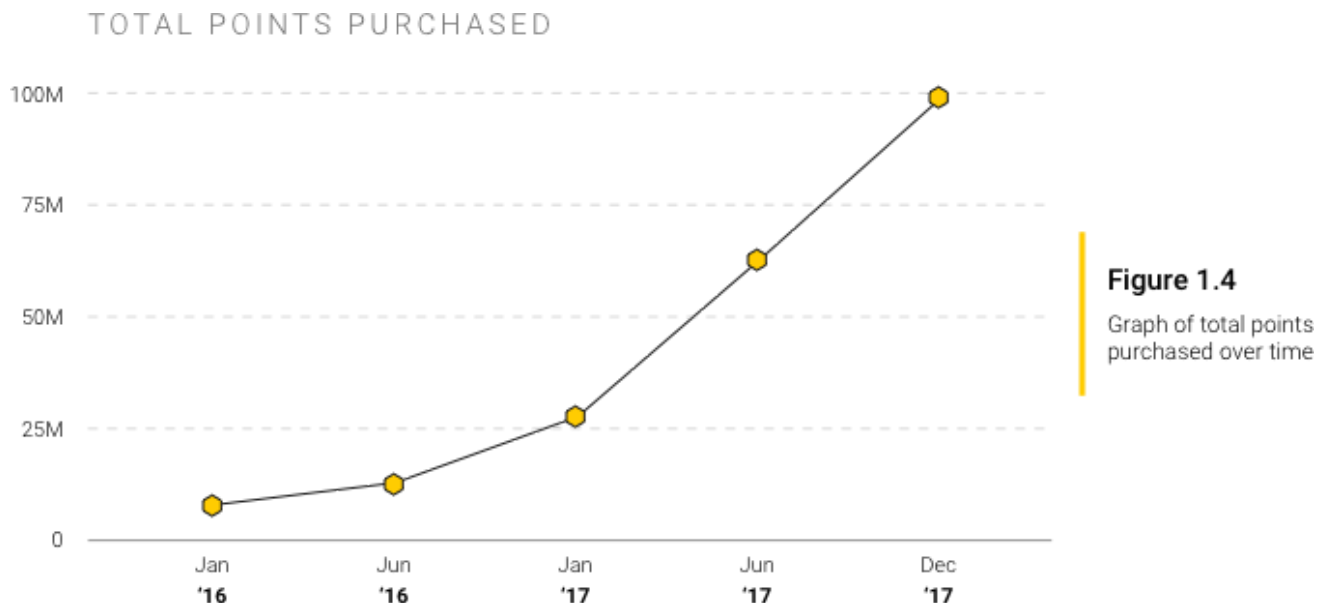
² <http://observer.com/2017/05/minds-open-sourced-social-media-facebook-competitor/>

Minds Beta introduced **Points** which are earned by interacting with the site (checking-in, referring new users, receiving votes, comments, shares, posting, etc.) or by purchasing in exchange for views, shares and other rewards across the network. The reward system quickly gained traction and has since become integral to the platform as the most popular feature.

To date, users have earned over 1 billion Points through the Minds reward system and over 100 million Points have been purchased directly.

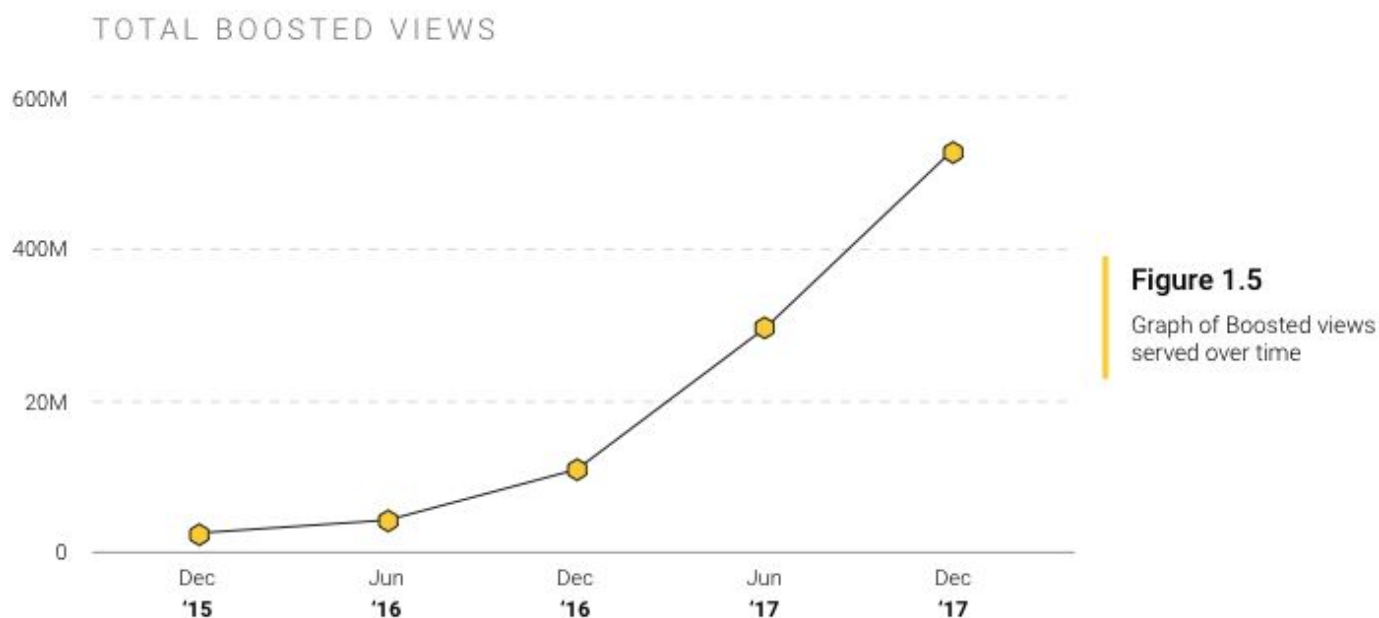
Points provide users with value in two ways:

1. Users may exchange Points to **Boost** their content and receive guaranteed views from the network (1 point = 1 view).
2. Users may **Wire** points directly to other channels as a tip or to pay for a premium subscription to exclusive content and unlock rewards.



The Boost system has grown significantly (1271.79%) since its introduction. We assert that our growth is essentially validation that the surrender of personal privacy to digital surveillance is not required for successful content exposure in the attention economy.

Boost has already served users with over 500 million views and is currently serving over 40 million views per month and over 1 million views per day. The system has gained popularity quickly because users are able to extend their reach beyond their existing subscribers. Minds makes it easier for influencers, publishers, and the like to increase exposure on their content and grow a following, even when compared to top mainstream networks.



Minds Wire is the peer-to-peer payment system that enables users to exchange their Points and USD for digital media views (impressions), exclusive content, premium subscriptions and rewards. Since its introduction in July of 2017, the Wire system has already executed over 150,000 transactions for a total volume of over 150 million Points and thousands of dollars in payments to top content creators.



The goal of Minds Beta was to build out the software and infrastructure to scale as an open source social network powered by a digital reward system. Points, Wire and Boost have proven successful and establish the foundation for the Minds contribution economy. Minds Beta has demonstrated that a sustainable reward system leveraged by an online community is not only successful, but a preferred model for social media interaction over mainstream alternatives.

c. The Minds Token

For the past three years, Points successfully fueled the Minds network and established the foundation for a rewards-based ecosystem where top contributors earn the most revenue and reach. Minds is building upon this foundation by leveraging blockchain technology to replace Points with Minds tokens.

The Minds token is a social networking utility built upon the Ethereum ERC-20 standard. Minds chose to issue its tokens on the Ethereum network because it is the leading open source, general purpose blockchain optimized for smart contracts. It includes sophisticated web tools to develop a user-friendly experience and has established broad credibility through market experience with mobile payments, distributed exchanges, cryptocurrencies and enterprise blockchain solutions.



Figure 1.7
Minds and Ethereum

Minds tokens will be used to deliver services on Minds, including Boost and Wire, with smart contracts that are cryptographically secure and transparent, as the contract terms may be verified and audited by anyone. This provides the community with a true peer-to-peer, decentralized token that enables autonomous and independent relationships between creators, supporters and advertisers.

The added dimension of incentives and rewards encourages users to share their content and be active on the network. Minds tokens may be used to subscribe to exclusive content, tip other users for their quality content, or purchase advertising views from the network or a specific channel's audience.

Minds will offer users the choice between *OnChain* and *OffChain* transactions. OnChain transactions benefit from being published and secured on the public blockchain, while OffChain transactions benefit from speed and no transaction fees.

OffChain tokens will be referenced and stored on a non-public database maintained by Minds. These tokens will be stored in Minds' reserve wallet and will directly represent a 1:1 reservation of OnChain tokens. Users will only be able to Boost OffChain for up to 5,000 views and Wire 100 tokens/day. These

thresholds are subject to change in accordance with development requirements and community feedback.

The Minds Points system proved the massive demand for a social network built around user rewards. In order to provide a smooth transition from Points to a token-based economy, we will, prior to any token sale, first release a testnet on the Rinkeby Ethereum test network, which will include a full integration of the Minds token with the rewards system, Wire and Boost.

This testing period is critical because it allows time to audit the smart contracts, uncover potential security vulnerabilities or bugs, fine tune the reward system and finalize the token economics and distribution schedule prior to moving into full production. Token Economics documents will be released following this phase along with potential improvements based on community and scholarly feedback.

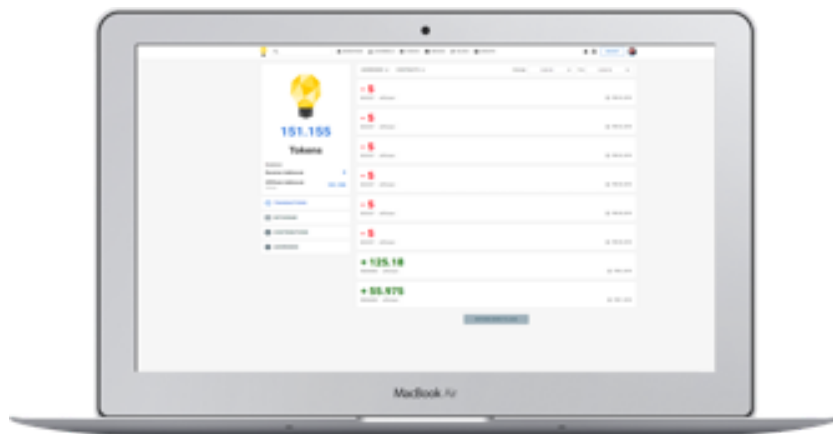


Figure 1.8
Screenshot of wallet on
desktop

2. ABUSE OF POWER

Mainstream social networks have demonstrated limited transparency and little willingness to share information or revenue with their creators. The bare minimum of what is requested by the media and users is disclosed. These extractive business models are driven by Big Brother practices of surveillance, secrecy and censorship. It is unfortunate that such innovative projects which have accomplished so much in terms of human interconnectivity and communication are unwilling to share source code and revenue. These are the ethical actions necessary to compel the global community to maintain the trust required for their continued growth.

a. Algorithm Manipulation

Algorithm manipulation and organic reach restriction³ have become pervasive in mainstream social networks. This practice has caused outrage among content creators for silencing voices⁴, shattering income⁵ and transforming user experiences into psychological experiments⁶. Entire industries⁷ and small businesses have been impacted, and livelihoods have disappeared overnight with no regard for the immense contribution and energy these users invested to build their followings. Facebook engagement for brands and publishers fell 20% in 2017 alone, bringing organic reach down as low as 2%.⁸

AVERAGE FACEBOOK ENGAGEMENTS 2016-2017 (ALL POST TYPES)

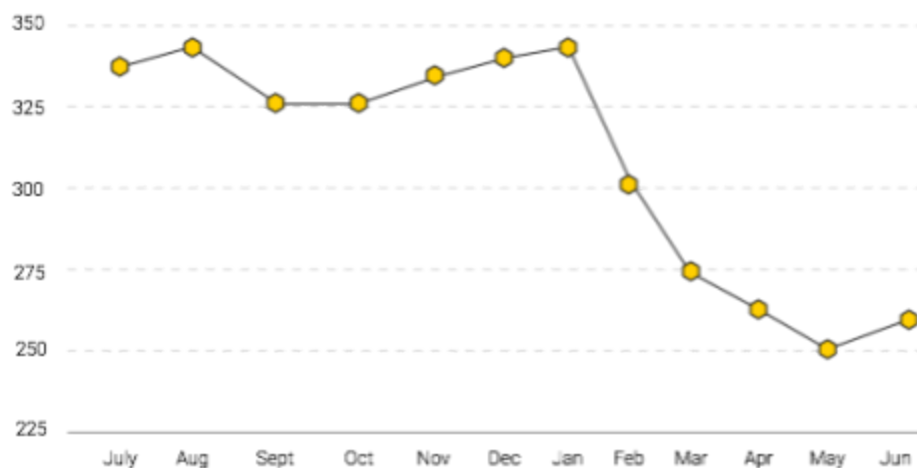


Figure 2.1
Graph of declining
Facebook reach
(Buzzsumo Analysis)⁶

³ <https://www.forbes.com/sites/federicoguerrini/2015/06/15/struggling-with-facebook-organic-reach-decline-try-this-new-open-source-social-networking-app/>

⁴ <https://gizmodo.com/facebook-hey-nice-media-you-got-there-shame-if-some-1819791648> <https://minds.com/boost>

⁵ <https://www.theverge.com/2017/11/14/16648348/youtube-demonetizing-iphone-x-videos>

⁶ <https://www.theatlantic.com/technology/archive/2014/06/everything-we-know-about-facebooks-secret-mood-manipulation-experiment/373648/>

⁷ <http://fortune.com/2012/07/12/the-facebook-tweak-that-killed-a-billion-dollar-industry/>

⁸ <http://buzzsumo.com/blog/facebook-engagement-brands-publishers-falls-20-2017/>

Depending on the acceptability of certain content, Pages have seen their ranking and discoverability significantly impacted. Unaccountable forces are at work behind the scenes dictating policy and technology decisions with regards to content reach and whether or not certain content may be monetized.

Facebook just recently began experimenting with new types of feeds in certain countries, where all content posted by Pages goes into a separate feed. The results were staggering, with some brands reporting a 67% reduction in organic reach and a 50% reduction in engagement.⁹ A system has been created where people and brands are no longer able to reach even their own friends and followers.

Algorithms are not inherently negative. There are many strong arguments for providing users with supplementary options for alternative newsfeeds and tailored search results based on past behavior and tendencies. The problem arises when these decisions are made without the consent of the user.

b. Excessive Centralization and Secrecy

Governance, source code, surveillance¹⁰ and censorship policy are all dictated by an architecture of secrecy and centralization¹¹. Such an industry pattern is highly corrosive to user-rights and public accountability which are becoming increasingly essential as billions of humans rely on these services and utilities to communicate.

The market at large is under threat from Orwellian control¹² of leading proprietary social networks. Fraud and a general lack of transparency are major problems facing the social networking, payments and digital ad spaces.¹³ Ads are served ubiquitously with little to no insight into who is paying for what or who is seeing them.

Monetization of content is difficult, and it is centrally governed. These services have the ultimate control over the value of content distributed on their platforms, and hold a dictatorial position on the fate and fortune of the people who are providing the most valuable component of their business: content. Moreover, there is little recourse to punish the service providers for abuse of powers, nor do they face many repercussions for their actions.

The recent wave of demonetization and censorship on mainstream social networks has caused many content creators who are dependent on these platforms for income to seek alternatives. Much of this risk to creator revenue stems from excessive dependence on centralized platforms. The ongoing “adpocalypse” began in early 2017¹⁴ where many top content creators on YouTube and AdSense

⁹ https://medium.com/@filip_struharik/biggest-drop-in-organic-reach-weve-ever-seen-b2239323413

¹⁰ <http://www.foxnews.com/tech/2018/03/20/silence-from-zuckerberg-sandberg-on-facebook-scandal-like-putting-gasoline-on-fire.html>

¹¹ https://www.washingtonpost.com/news/democracy-post/wp/2017/10/31/its-time-to-end-the-secrecy-and-opacity-of-social-media/?utm_term=.8fab5e5c28fb

¹² <http://video.foxnews.com/v/5738232786001/>

¹³ <https://www.wsj.com/articles/facebook-disclosure-about-russian-political-ads-sparks-debate-on-transparency-1504878093>

¹⁴ <http://adage.com/article/digital/pewdiepie-declares-adpocalypse-youtube-makes-rules/308591/>

revealed that their earnings had declined anywhere from 30% to 99% since the platforms began demonetizing videos that were not deemed advertiser friendly.¹⁵ Just recently, YouTube went as far as changing their monetization policy to require 1,000 followers and 4,000 hours of views in the past year, which effectively demonetized thousands of small content creators.¹⁶ This trend has forced many creators to find other ways to earn revenue, a transition that resulted in the rapid emergence of new crowdfunding and revenue-sharing options.

In addition, mainstream networks have started showing a double standard and are not treating all users equally under their policies.¹⁷ There is a glaring hole in the existing business model for social media advertising because the platforms are acting as gatekeepers to advertisers. YouTube could, at any time, decide to demonetize a video because it is not advertiser friendly, but in reality, there may be hundreds or thousands of brands and advertisers who may not object to running their promotion on the video in question because of the audience and level of engagement. Rather than having a corporation make these judgments, Minds solves this problem by allowing content creators, publishers and advertisers to handle their relationships independent of any centralized authority and directly between each other.

Blockchain technology and other tools for decentralized architectures are still young. Many centralized services remain beneficial for user experience and scalability, among other things. Minds has adopted a hybridized approach that incorporates both centralized and decentralized architectures to capture the benefits of each. Our criticism of mainstream networks revolves mostly around lack of transparency and commitment to decentralizing power. For this reason, Minds has taken the initial step towards decentralization with its monetization system.

Minds is one of the few social networking platforms that truly embodies the transparency movement by keeping the entire software stack free and open source (and not just the added blockchain or token layer). We hope that more companies will follow suit, allowing tech innovation to exponentially increase in speed and efficiency in the coming years.

¹⁵ <http://www.tubefilter.com/2017/05/04/how-youtube-adpocalypse-affected-top-creators/>

¹⁶ <https://www.polygon.com/2018/1/17/16900474/youtube-monetization-small-creators-adsense>

¹⁷ <https://www.youtube.com/watch?v=SOa6PA8XQtQ>

3. THE CONTRIBUTION ECONOMY

Centralized social networks have become outdated. Rather than rewarding those who are contributing the content that drives traffic and attention to the networks, they exploit them to increase their own advertising revenue and bottom line growth.

Minds operates under a new business model that fairly rewards users for their contributions to the network with revenue and expanded reach. Additionally, Minds provides content creators with the tools they need to successfully monetize their content independently with their peers. These tools include crowdfunding, paid subscriptions, ad revenue-sharing, tipping, peer-to-peer advertising and a proven contribution-driven reward system.

The implementation of crypto-tokens with the reward system allows users and developers to translate their time and energy into tokens that hold **real, lasting** value on the Minds platform. By coupling peer-to-peer monetization tools with a properly structured, incentive-based reward system, Minds has built a sustainable digital economy that effectively rewards the users who contribute the most to the network.

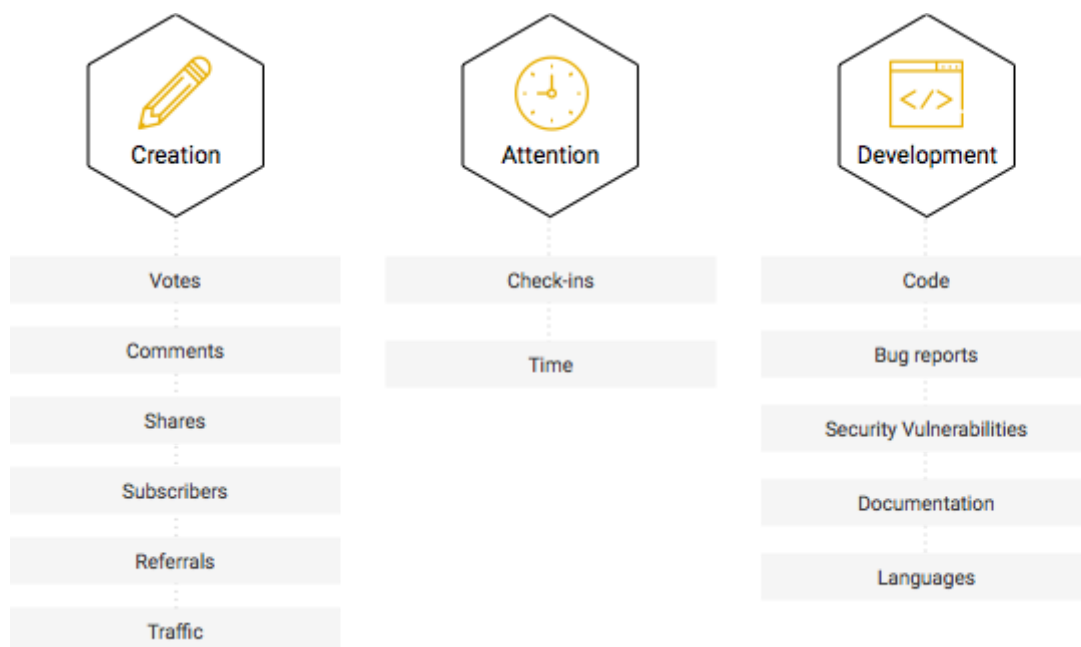


Figure 3.1
The Contribution Economy

Minds will reserve tokens for ongoing user and developer rewards. A predetermined number of tokens, based on the number of daily participants, will be rewarded at the end of each day as a **Daily Reward Pool**. An individual's daily contribution will be determined by how much they contributed to the network

that day relative to the entire community. This percentage will then be applied to the Daily Reward Pool to determine each individual's daily token grants.



$$\text{Your Tokens} = \left(\frac{\text{Your Contribution Score}}{\text{Total Network Score}} \right) * \text{Daily Reward Pool}$$

All contribution rewards will be deposited into a recipient's OffChain address, located in their Minds wallet. Users will maintain the ability to withdraw these tokens from their OffChain address into their OnChain address. Users wishing to transfer their tokens to their OnChain address will be required to pay a small ETH transaction fee to cover the gas usage of the payout.

Minds will release more information with regards to the specific weighted scores for each contribution at a later date and necessarily maintains the right to make changes at any time. We must maintain flexibility with the scoring system in order to ensure that the system is fair and can evolve with the network as it grows.

a. User Rewards

Quality content is essential in order for a social network to grow and thrive -- it is the driving force behind attracting new users and making sure they stick around. It is one of the major reasons tech giants like Facebook and Google have accrued so much power. However, the creators of this content are, objectively, not being fairly rewarded for their efforts. They do the heavy lifting yet reap none of the benefits¹⁸.

Minds is changing this dynamic with its contribution economy. Creators earn tokens for producing quality content that drives traffic and receives votes, comments, subscribers and Reminds (the Minds sharing function). Additionally, creators earn Minds tokens by referring new users to the site. This equals an added benefit of an accelerated network effect.

Another contribution that is equally valuable to the growth of a social network is user attention. From a content creator's perspective, a network is only worth the engagement it provides. For this reason, it is important to also measure user attention from a 'time spent' perspective when determining a user's contribution to the network in a given day. An activity-based crypto-reward mechanism is valuable to both active users and the network itself considering that monthly active users (MAU), daily active users (DAU) and hourly active users (HAU) are essential metrics to quantifying growth and stickiness of modern social applications.

¹⁸ <https://digiday.com/media/publishers-seek-to-apply-pressure-on-facebook-to-improve-ad-monetization-issues/>

b. Development Rewards

Another area of contribution that Minds will provide crypto rewards for is development of the software. Minds is 100% free and open source, so the code is free to the public for peer review and contribution.¹⁹

Free and open source software (FOSS) is becoming more widely adopted than ever before. Today, there are over one million open source projects in development²⁰ and roughly 95% of applications are leveraging open source technology to some extent.²¹ The transparent nature of open source software sparks innovation at a much more rapid rate than with proprietary technology because it opens it up to rigorous peer-review and new use cases. Open source has the benefit of increasing security due to its publicly auditable nature.²² Combined with the Developer Rewards program, there is also an incentive for users to disclose such vulnerability and exploits.

Minds will reward developers for finding bugs, identifying security vulnerabilities and making contributions to the code or open source documentation. Since the level of contribution can vary significantly, all development rewards will first need to be reviewed by Minds to determine the amount rewarded. Minds will evaluate reward sizes for bugs according to severity calculated by the OWASP risk rating model which is dependent on Impact and Likelihood. Contributed software for new features and the final reward amount will be approved or rejected at the sole discretion of Minds.

New features will also be considered, but Minds will only issue rewards for new features that are first approved and then implemented on the network. All submissions for new features must be in line with our philosophies of Internet freedom, exponential reach and improved monetization and user rights.

c. Beta Rewards

In addition to the ongoing contribution reward system, Minds will reserve tokens for a one-time reward to all members of the Beta community. Rewarding early adopters is important as the network would not be anywhere close to where it is today without the energy and dedication of the Beta community.

A snapshot of all existing Point balances was taken on January 29th at 5:00 pm EST. The snapshot method was chosen because it was the most fair way to get data for every user's Points balance without giving anyone the chance for abuse or manipulation. More details regarding the specific conversion process for this reward will be provided with the release of the Token Economics.

¹⁹ <https://minds.org>

²⁰ https://opensourcestrategyforum.org/wp-content/uploads/2017/11/Open-Source-Sparks-Innovation_-BGracely_-2017.11.08-1.pdf

²¹ <http://vmblog.com/archive/2017/11/30/black-duck-software-2018-predictions-what-s-in-store-for-open-source-in-2018.aspx#.Wigx6ktrzUJ>

²² https://www.schneier.com/blog/archives/2011/06/open-source_sof.html

d. Fraud and Abuse

Minds will require all users to provide a unique mobile number to become eligible for crypto rewards. Minds does not store the phone numbers you provide. The numbers are hashed using SHA-256 and combined with a salt key. The salt ensures that the numbers can not be matched unless the correct salt is provided. This step allows for unique count aggregations when querying contribution scores.

It is important to note that all creation rewards are dependent on engagement from other users. One issue with the existing Points reward system was the ability for a user to earn rewards for actions that do not require the unique engagement of others, such as uploading a video or writing a blog. By moving the creation rewards to be entirely *dependent* on the actions from other unique users, it significantly reduces the vulnerability to manipulation. Minds will continue to implement and improve anti-gaming measures as the reward system grows in popularity.

e. OffChain Balances

To secure a user's OffChain balance and prevent a balance from being spent more than once by multiple transactions, Minds uses a two-phased locking system. Once a user initiates a transaction, their balance is immediately locked with a Lightweight transaction (this ensures that all nodes in the cluster receive the write).²³ Should a user attempt to initiate another transaction during the lock period, the request will be denied until the lock is released.

All OffChain transactions are stored on the Minds databases for reference with application level immutability. The database uses a replication factor of three which ensures that the data is maintained on at least three active nodes at any given time. We will monitor and review all user balances daily to check for anomalies and will continue to follow and implement cyber security best practices, such as continuous threat monitoring and frequent software audits.

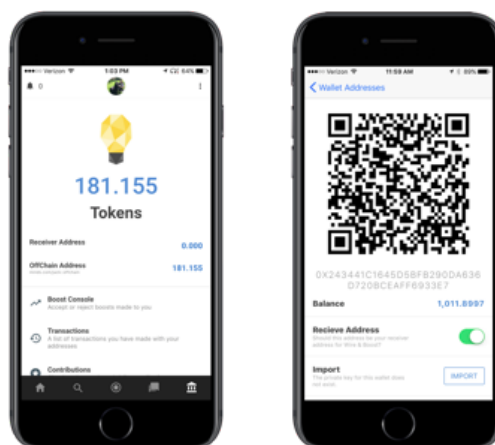


Figure 3.2
Screenshots of Wallet
home and setup

²³ https://docs.datastax.com/en/cassandra/2.1/cassandra/dml/dml_twt_transaction_c.html

4. BOOST: AD NETWORK

Traditional social networks have come under public scrutiny over the past few years with regards to advertising fraud, algorithm manipulation and disinformation. As issues with fake news continue to make global headlines, it has become abundantly clear that the current centralized social networking system is broken due to a host of reasons - most importantly, a lack of transparency.

Minds takes numerous actions to make the network as transparent as possible while maintaining user privacy. First and foremost, the code is 100% free and open source and available to the public. Second, Minds publishes an annual financial report with the SEC²⁴. Finally, Minds is moving all of its advertising business onto the blockchain with the implementation of smart contracts to key products such as Boost and Wire.

Social networking communities are starting to demand more transparency from their proprietary service providers as issues with demonetization, restricted reach, censorship and fraud continue to emerge. Community oversight is essential to security, efficiency, innovation and cooperative corporate infrastructure in general. By licensing the platform as AGPLv3, Minds is able to protect itself from proprietary modifications and provide a foundational dedication to transparency.

Minds is taking transparency to the next level by leveraging smart contracts for all OnChain Boost advertising transactions. Amidst the fog recently surrounding digital advertising fraud and disinformation, this provides accountability to the public regarding the source of all paid advertising, as there will be a publicly auditable ledger of advertising transactions.

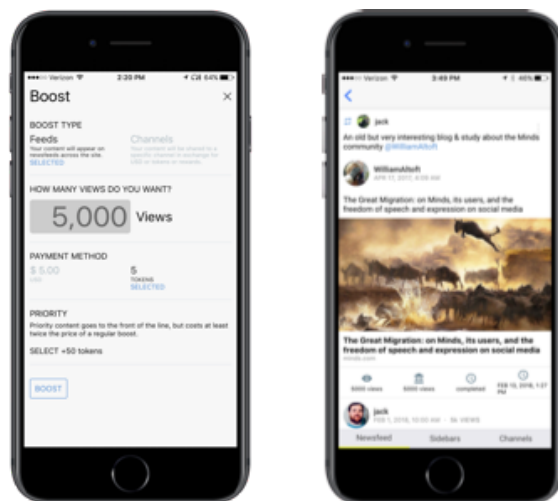


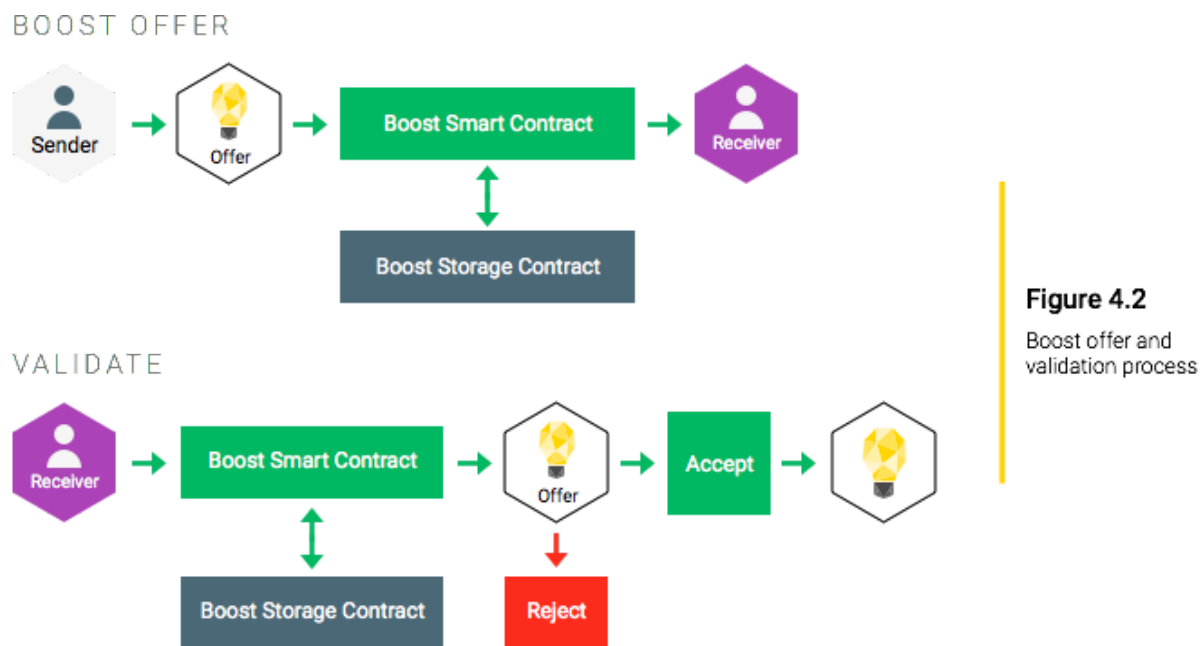
Figure 4.1
Screenshot of Boost
Prompt and Console

²⁴ <https://www.sec.gov/Archives/edgar/data/1703996/000167025417000102/0001670254-17-000102-index.htm>

The smart contracts for the Boost system will contain specific data disclosures to all advertising on the platform. This data will include the Boost GUID (global unique identifier), the wallet address of both the sender and receiver, the amount that was transacted and a MD5 checksum to verify the integrity of the data.

Minds also provides content creators with the ability to manage relationships with advertisers directly through the peer-to-peer Boost feature. Peer-to-peer Boost is a paid promotion tool, where users can send offers of Minds tokens to other users in exchange for a guaranteed placement of content to their audience that can never be deleted.

Every Minds token transaction will establish a direct, peer-to-peer relationship between advertisers and content creators with a smart contract. This enables creators to autonomously own the relationship with their advertisers and eliminates any risk of third party interference or demonetization. The Boost protocol is platform agnostic and may be implemented not just on Minds.com, but anywhere on the web including your own website.



All parties benefit from the security of a negotiated contract. The advertiser can revoke their offer up until the creator decides to accept or reject. The creator will immediately receive their funds upon accepting an offer. If the offer is rejected, the advertiser will not be charged.

Leveraging Minds tokens and their associated smart contracts transforms digital advertising. Fraud and abuse are prevented by the distributed blockchain and smart contracts are effectively unbreakable

agreements because the terms are transparent and auditable to any party with access to the chain. The integrity of Boosts can be ensured by the validation of a checksum of the content on the blockchain and on the local ad network.

For the checksum, Minds will use a simple, yet effective MD5 hash of the following attributes (boost_guid, boost type (newsfeed, offer, sidebar), owner_guid, perma_url, message, title, time_created). Should any of these variables change in the future, it will generate a new MD5 checksum, indicating that the integrity of the Boost has been modified. Whilst MD5 has been widely deprecated from use as a password hashing algorithm due to its chances of possible collisions, it provides a quick and inexpensive 32-byte hash for simple change validation.

EXAMPLE:

//Hash to be stored on the blockchain at time of boost creation:

```
md5('10001' . 'newsfeed' . '20002' . 'https://minds.com/token' . 'This is a message' . " " . '1519753264');  
0475e37f931634df0afa78139a08f991
```

//Example of a modified message that will not match what was stored on the blockchain:

```
md5('10001' . 'newsfeed' . '20002' . 'https://minds.com/token' . 'This is a different message that changed' . " " . '1519753264');  
3ee910ec8d9966b8ee3ef658ef581fd9 <--- different than hash above due to modification of message
```

5. WIRE: DECENTRALIZED PAYMENTS

The recent outbreak of demonetization and censorship on mainstream social media has exposed major flaws with a centralized system, as it allows a central authority to possess too much control over the livelihood and revenue opportunity of the users. This becomes an issue with social networks in particular, as all content is user-generated and ranges from all across the political spectrum. Content that does not fit the agendas of the tech giants appears to be unfairly punished, without any regard to how popular the content may be with a community.²⁵

These issues have caused a resurgence in grass-roots monetization strategies such as crowdfunding, tipping, direct advertising and donations. Content creators are reaching back out to their loyal supporters to help recover the lost revenue from sharing content that is not politically correct enough for mainstream advertisers. Many new companies have emerged to capitalize on this movement, but almost all of them are built on a similar centralized philosophy and thus carry the same problems. The centralized company owns the contract between the creator and their supporter, and therefore also owns the ability to demonetize and implement high fee structures.

By leveraging smart contracts for peer-to-peer payments, Minds is enabling content creators to autonomously own the relationships with their supporters and advertisers without any risk of interference from a centralized authority or service provider. Because Minds tokens and the associated protocols are open source and platform agnostic, the risk of demonetization is effectively eliminated.

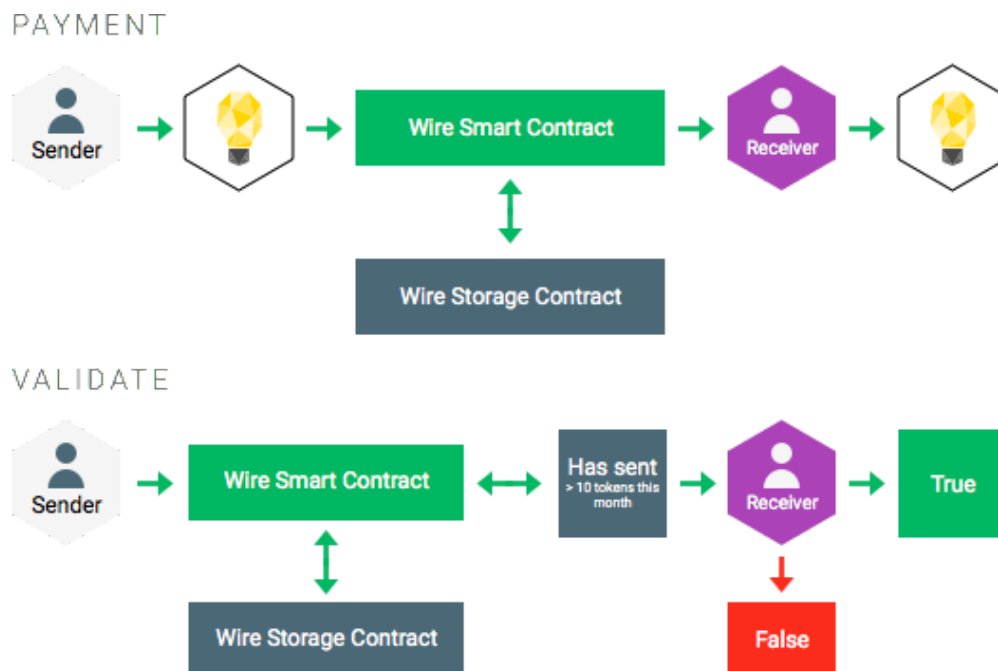


Figure 5.1

Wire purchase and validation logic

²⁵ <https://www.wired.com/story/facebooks-hate-speech-policies-censor-marginalized-users/>

a. Autonomous Peer-to-Peer Monetization

The Wire protocol is a peer-to-peer payment system for creators of digital media to establish a direct relationship with their supporters without the interference of a centralized authority. It leverages smart contracts to increase transparency and minimize the risk of fraud, demonetization and censorship. The associated Wire smart contracts will store the wallet addresses of both the sender and receiver, as well as the amount and timestamp for the specific transaction.

Wire can be leveraged in multiple ways in order for creators to monetize their content. First, it can be used simply as a way for supporters to send a tip or donation on content they enjoy. Second, creators can offer paid monthly subscriptions to their supporters which provide access to exclusive content and other custom rewards. This allows content creators to go directly to their fans for support, as opposed to needing a centralized network provider to determine whether or not their content is appropriate enough to earn revenue.



Figure 5.2
Screenshot of Wire

Offering tools for peer-to-peer monetization coupled alongside a contribution-driven reward system provides content creators with an end-to-end revenue model and incentive to help grow the network with their influence. The result is an ecosystem where the users who are creating the highest quality content, as determined by the community, will be rewarded with the most revenue and reach.

b. Recurring Payments

One of the most essential aspects of the peer-to-peer revenue model is recurring subscription payments. For recurring subscriptions to be possible on the blockchain, pre-approvals must be made to the Wire smart contract so that funds are able to be claimed at later dates. However, the pre-approved

amount is not reserved by the Wire smart contract, so the sender will still maintain full autonomy and ownership of their funds.

For example, if Mark wishes to make a recurring payment of 10 Minds tokens per month to Bill for one year, Mark would need to pre-approve the Wire Smart Contract for 120 Minds tokens (12 months). This would allow the contract to keep the subscription recurring for a year even though Mark still has the ability to spend the full pre-approved amount of 120 tokens. If Mark does not have a sufficient amount of tokens when the recurring payment is due, the transaction will fail.

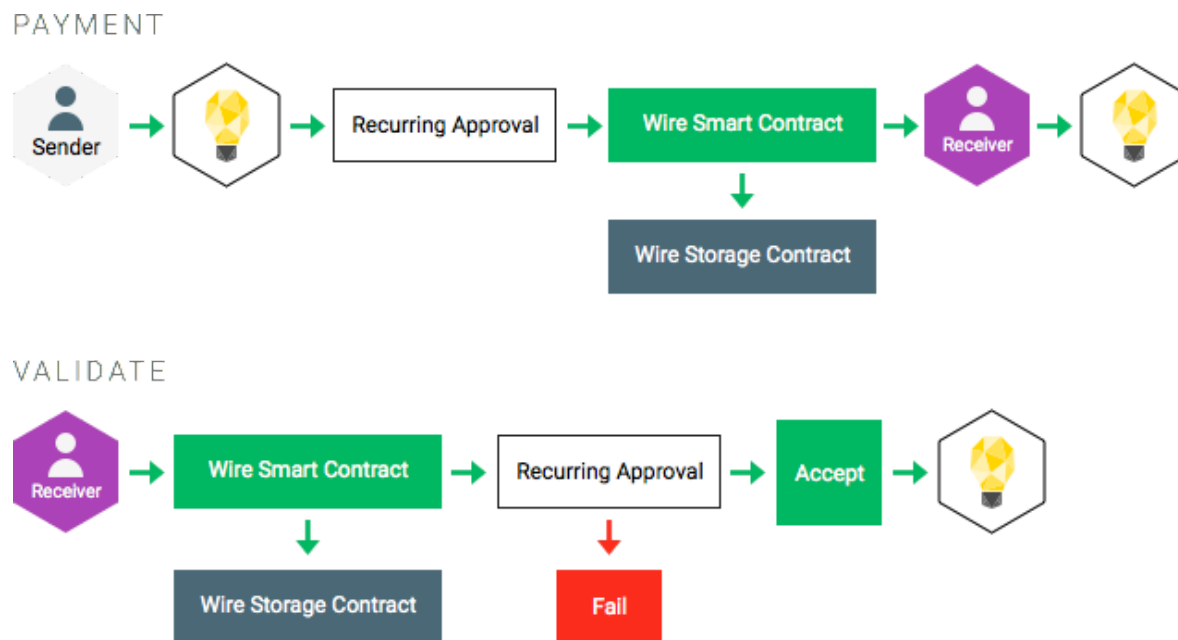


Figure 5.3
Recurring payments
offer and validation

6. TECHNOLOGY

Minds is an open source social media platform hosted on Amazon Web Services (AWS) and is built using the most efficient and scalable modern technologies available. The full stack includes MongoDB, Cassandra, Redis, ElasticSearch, Docker, Angular, Ethereum, OpenZeppelin, Truffle, GPLv3, PHP, NativeScript, NodeJS, Socket, MetaMask, TypeScript, DroneCI, RabbitMQ, ZeroMQ, OpenSSL, NGINX, React Native, GNU/Linux and Ubuntu.

The cross-platform app maintains a fully functional web application at <https://minds.com>.



Minds native mobile apps are built on top of React Native, allowing us to easily develop and release dual platform.



[Minds.com](https://minds.com) is running in production today and the Testnet is in a private Beta. More information on how to access the Testnet can be found at <https://minds.com/token>. 100% of the Minds code will be open sourced prior to the Token Distribution Event.

7. TEAM

a. Core



Bill Ottman, CEO and Founder
[@ottman](#)



John Ottman, Chairman & Co-Founder
[@john](#)



Mark Harding, CTO and Co-Founder
[@mark](#)



Jack Ottman, COO
[@jack](#)



Peter Schwartz, CFO
[@peterschwartz](#)

Bill Ottman - Founder and Chief Executive Officer

Bill founded Minds in 2011 with the goal of bringing a free, open source and sustainable social network to the world. He co-founded multiple viral media organizations, holds a fellowship at Boston Global Forum and serves on the Advisory Board of Code To Inspire, a non-profit building coding schools for women in Afghanistan. He graduated from University of Vermont with a BA in English.

John Ottman - Chairman and Cofounder

In addition to his role as Minds chairman and co-founder, John is Executive Chairman of Solix Technologies, Inc. and brings over 30 years of software industry experience. Previously, he was President and CEO of Application Security, Inc. (Trustwave), President of Princeton Softech, Inc. (IBM), and Executive Vice President, Worldwide Markets at Corio, Inc. (IBM). He also has held key executive roles at Oracle, IBM and Wang Labs and is author of the book *Save the Database, Save the World!*

Mark Harding - Chief Technology Officer

Mark is the lead developer and technical leader of the global Minds open source community. Prior, Mark was Founder and CEO of Kramnorth. He is an orchestral musician, graduate of the Royal Conservatoire of Scotland and has been coding open-source systems for over a decade.

Jack Ottman - Chief Operating Officer

Jack is our Chief Operating Officer and joins Minds from IBM Software Group where he was a top sales executive in the Communications sector, focused on cloud and e-commerce. Jack graduated from Washington & Lee University with a BA in Business Administration.

Peter Schwartz - Chief Financial Officer

Peter Schwartz has over 30 years of senior financial management experience in the software and technology arena. Pete has most recently served as CFO at Cloudcheckr, a leading cloud analytics firm. He has also been the CFO at Application Security (Trustwave); Computer Associates International; Interworld Corporation; Opus360 Corporation/Artemis International Solutions Corporation; and Actimize Ltd.

b. Engineering



Nicolás Andrés
Ronchi Cesarini
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Martin Santangelo
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Marcelo Rivera
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Emiliano Balbuena
[@edgebal](#)



Ian Crossland
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Andy Culp
[@markandrewculp](#)



Nicholas Lewis
[@nick](#)

c. Advisors



Faizan Khan | **Visary Capital**



Gabriel Abed | **Bitt.com**



Reed Smith LLP



Elizabeth McCauley | **Blockchain Evangelist**



Veena Gundavelli | **Emagia**



Nguyen Anh Tuan | **BGF**



Douglas Rushkoff | **Rushkoff.com**



Terrence Koeman | **OIF**



Sai Gundavelli | **Solix**



Marcin Jacubowski | **OSE**



Jason Tyra | **Tyra CPA**



Daniel Pinchbeck | **Pinchbeck.io**



Robert Griffiths | **MG LP**

8. RISKS

The purchase of the Minds token carries significant risk. Prior to purchasing Minds tokens, the purchaser should carefully consider the risks listed below and, to the extent necessary, consult a lawyer, accountant, and/or tax professional prior to determining whether to purchase Minds tokens.

1. There is no assurance that at any time in the future the Minds token (i) may be exchanged for goods or services other than on the Minds platform, (ii) may have any known uses outside the Minds platform, or (iii) may be traded on any known exchange.

2. Minds tokens are intended to be used by the purchaser on Minds.com, a social media platform. It is possible that the user population of Minds.com will change and/or decline over time, which may affect the functionality of Minds token on the Minds platform.

3. Minds token will be stored in a wallet, which can be accessed with a password(s) or private key selected by the purchaser. If a purchaser of Minds tokens does not maintain an accurate record of his or her password(s) or private key, this may lead to the loss of Minds tokens. If a purchaser's password or private key protection is weak and it is cracked or otherwise obtained by a third party, this may also lead to the loss of Minds tokens. As a result, purchasers must safely store the passwords or private keys in one or more backup locations that are well separated from the primary location. Minds is not responsible for any purchaser's loss of password or other credentials.

4. The purchaser recognizes that some of the services that Minds anticipates to offer in the future are currently under development and may undergo significant changes before release. The purchaser acknowledges that any of its expectations regarding the form and functionality of the Minds platform and/or Minds token may not be met for any number of reasons.

5. The purchaser understands that while Minds will make best efforts to launch any anticipated services on time, it is possible that the official release may be delayed or that certain services may not be developed or enabled as currently anticipated.

6. As with other crypto tokens, the value of the Minds token may fluctuate significantly and decline in value for any number of reasons, including but not limited to, supply and demand, overall crypto token market conditions, political and geographical reasons, changes to laws and/or regulations in any jurisdiction, and technical reasons.

7. The tax characterization of Minds tokens is uncertain. Your purchase of Minds tokens may result in adverse tax consequences to you, including withholding taxes, income taxes and tax reporting requirements. New or future changes to U.S. and non-U.S. tax laws could also adversely affect us and could affect our ability to develop and/or maintain the Minds platform. The Internal Revenue Service has issued guidance through Notice 2014-21, which describes how existing general tax principles apply to transactions using virtual currency. Such guidance may or may not assist a prospective purchaser in determining the tax characterization of Minds tokens. Prior to acquiring Minds tokens, a prospective purchaser should consult with his/her/its own investment, legal, tax and/or accounting advisors and/or other consultants to determine the potential tax consequences of such a transaction.

8. There is no guarantee that other current or future solutions or technology will not render the Minds business plan, platform and Minds token obsolete.

9. In addition to risks related to potential SEC enforcement action, Minds may also be subject to private suits brought by aggressive plaintiffs' attorneys on behalf of investors. The explosion of interest in initial coin offerings and in "blockchain" technology has attracted the plaintiffs' bar. In late 2017, plaintiffs' attorneys filed the first private investor class action lawsuits involving these offerings, with more lawsuits subsequently filed or threatened. While Minds believes and has taken steps to ensure that Minds tokens are not "securities" as defined by the Securities Act, this token offering may be scrutinized by both the SEC and aggressive plaintiffs' attorneys. Any such litigation or regulatory action could result in substantial costs and diversion of resources, even if we are found not to be at fault, and could ultimately prevent us from developing and/or maintaining the Minds platform.

10. Minds tokens will be issued on the Ethereum blockchain. As such, any malfunction or unexpected functioning of the Ethereum blockchain may impact the purchaser's ability to transfer or securely hold Minds tokens. Such impact could adversely affect the value of Minds tokens.

11. Third parties may bring intellectual property claims against Minds. Such claims may result in litigation and could impair Minds' operations or implementation of its business plan. Legal standards relating to the validity, enforceability and scope of protection of intellectual property rights are uncertain and evolving. We cannot assure you that others will not develop or patent similar or superior technologies or solutions, or that our patents, trademarks and other intellectual property will not be challenged, invalidated or circumvented by others. Unauthorized copying or other misappropriation of our proprietary technologies could enable third parties to benefit from our technologies without paying us for doing so, which could harm our business and our ability to develop and maintain the Minds platform. Monitoring unauthorized use of our intellectual property is difficult and costly.

12. It is possible that, due to any number of reasons, including without limitation, the failure of the business relationships, or competing intellectual property claims, Minds may no longer be a viable platform and may dissolve.

13. Sales of crypto-tokens have been known to come under malicious attacks from hackers and criminal parties resulting in theft of tokens, which may result in massive losses to purchasers and Minds.

14. Many crypto-tokens fluctuate in value in tandem with the market price of Bitcoin and other tokens. It is possible that Minds tokens will be affected by events that cause bitcoin or other tokens or cryptocurrencies to increase or decrease in value.

15. Regulators continue to provide guidance with respect to ambiguities in existing laws and regulations in the context of token sales. Lawmakers and regulators are also considering and may approve new laws and regulations that govern the offering of crypto-tokens. It is possible that a government or regulatory agency will pursue Minds and require it to suspend or cease its business operations and the platform in light of new interpretation of existing laws or regulations, or passage of new laws and regulations.

15. Crypto-tokens are a new and untested technology. In addition to the risks set forth herein, there are risks that Minds cannot anticipate. Risk may further materialize as unanticipated combinations or variation of the risks set forth above.